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FACSIMILE TRANSMISSION COVER SHEET

August 19, 2002

To: Examiner P. Natividad
Group Art Unit 2877

703-746-4809

From: Mario A. Costantino

Your Ref.: 09/593,800

Our Ref.: 106514

Number of Pages Sent (Including cover sheet): 3

Prepared By: MAC/ms

Comments:

Sent by: ms

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Summary of Arguments for Interview - 09/593,800

I. Overview

Claims 10-15 and 24 stand rejected under 35 U.S.C. §102(b) over U.S. Patent No. 5,523,841 to Nara et al. Claims 1-9, 16-23 and 25-30 stand rejected under 35 U.S.C. §103(a) over Nara et al.

While the first two paragraphs on page 3 of the Office Action (in the "Response to Arguments") assert that the argued claim features are provided in Nara et al., the Office Action does not actually indicate where Nara et al. teaches each of the claimed features.

For example, the Office Action provides no comments with respect to independent claims 1 and 2. Since Nara et al. does not disclose a plurality of movable stages, it cannot disclose or suggest the features recited in the last two clauses of each of these claims, which relate to the interaction of measurement systems that measure a plurality of movable stages.

With respect to independent claim 10, the Office Action does not explain how, in the Examiner's opinion, Nara et al. discloses setting an initial value "on the basis of the estimated degree of interference and a phase measured with the one measurement axis." As disclosed at col. 7, lines 1-7, Nara et al. only discloses that "the difference of a newly measured value from the value measured by the interferometer which has been in operation (that is, the difference between values measured by the respective interferometers) may be added to the value measured by the interferometer which now comes into operation. Otherwise, an offset value calculated by software and the like may be added thereto." This does not correspond to what is recited in claim 10. For example, there is no discussion in Nara et al. of phase measurement or the use thereof to set an initial value as claimed in claim 10.

Substantive

II. Independent claims 1 and 2

Independent claims 1 and 2 each recite:

- (A) a plurality of movable stages disposed on a certain movement plane so as to be movable independently of each other; and
- (B) a first measurement system which measures within a predetermined measurement range a position of one of the plurality of movable stages.

Independent claim 1 further recites:

- (C) a second measurement system which measures an amount of positional deviation of each of the plurality of movable stages from a predetermined reference position within the predetermined measurement range, or a degree of coincidence of each of the plurality of movable stages with respect to the reference position; and
- (D) wherein a measurement value obtained with the first measurement system is corrected on the basis of a measurement result of the second measurement system.

obvious use of Nara's teaching in any plural stage e.g. one at exposing station swinging with water/unloading station

Independent claim 2 further recites:

(C') a second measurement system which continuously measures positions of the plurality of movable stages within a second measurement range partially overlapping the first measurement range; and

(D') a control system which corrects the measurement results of the first and second measurement systems on the basis of the measurement results of the first and second measurement systems.

With respect to independent claims 1 and 2, the Office Action takes Official Notice that it is known to provide a plurality of stages on a movement plane (element (A) of claims 1 and 2). Even accepting the Office Action's assertion, Hara et al. does not disclose or suggest element (C) of claim 1 or element (C') of claim 2. In addition, even with the proposed modification of Hara et al., it still does not disclose or suggest element (D) of claim 1 or element (D') of claim 2. Since Nara et al. does not disclose a plurality of movable stages, it does not disclose or suggest these features of claims 1 and 2.

III. Independent claim 10

Independent claim 10 recites:

(i) an interferometer system which measures an amount of displacement of the movable stage by directing a measurement light at the movable stage and causing a reflected light thereof to interfere with a reference light, wherein the interferometer system has a plurality of measurement axes of the measurement light and is disposed such that even if one of the plurality of measurement axes is not irradiating the movable stage, the amount of displacement can still be measured by another measurement axis; and

(ii) a signal processing system with which, when the one measurement axis changes from the state of not irradiating the movable stage to a state of irradiating the movable stage, a degree of interference of the one measurement axis is estimated from a measurement result for the another measurement axis, and an initial value of the one measurement axis is set on the basis of the estimated degree of interference and a phase measured with the one measurement axis.

As noted above, Nara et al. does not disclose or suggest setting an initial value "on the basis of the estimated degree of interference and a phase measured with the one measurement axis." Nara et al. provides no discussion of phase measurement. The Office Action does not explain how, in the Examiner's opinion, Nara et al. discloses this feature.

phase measuring inherent to interferometry